

REMARKS

Amendment to the claims

The language of claim 1 has been amended to recite " *treating said patterned silicon layer with etching residues on sidewalls thereof using a gas comprising oxygen and a silicon etching agent to thereby form an etching buffer layer conformally on the etching residues and the top surface of the patterned silicon layer*"; and the language of claims 7 and 14 has been amended consistently.

The above amendments are supported by the application as filed, for example paragraphs [0022] and [0023].

New claims 21, 23 and 24 have been added to recite that the silicon etching agent comprises no water, and a new claim 22 has been added to recite that the silicon etching agent comprises Cl_2 , SF_6 , or HBr .

New claims 21-24 are supported by the application as filed, for example paragraphs [0022] and [0023].

No new matter has been added. All claim amendments are made without prejudice, and the Applicants expressly reserves the right to prosecute any matter cancelled from the claims in this application or in any derivative thereof.

Rejections under 35 U.S.C. 103

Claims 1-3, 5-10, 12-15 and 17-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,204,130 to Gardner in view of the admitted prior art, and claims 4, 11 and 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner in view of the Admitted Prior Art (APA), and further in view of U.S. Patent No. 5,977,589 to Schloesser. Applicants respectfully disagree.

Claim 1

In the Advisory Action issued on September 8, 2006, the Examiner acknowledges that the prior art does not teach that H₂O can be used as an etching agent for silicon, but opines that the limitation "etching agent" recited in claim 1 "is not used to etch the silicon in the claim. It is 'called' as an etching agent and it is use for 'treating' the silicon in the claim. Therefore, H₂O would read on claimed etching agent".

The Applicants strongly disagree with the Examiner. The Examiner is respectfully reminded that section 2111 of the MPEP provides (emphasis added) that **"During patent examination, the pending claims must be 'given *>their< broadest reasonable interpretation consistent with the specification'"**. Applicants note that the specification unambiguously relates to the processing of silicon, and claims etching silicon layers. Applicants therefore respectfully submit that by opining that H₂O, which as acknowledged by the Examiner is not a silicon etching agent, reads on the term "etching agent" recited in claim 1, the Examiner interprets this term in a way that is not consistent with the specification.

Applicants also note that the Application teaches using: "etching agent comprising hydrogen halide (HX), such as HF, HCl, and HBr" and "etching agents comprising hydride halogen" (paragraph [0005]); "etching agent selected from the group comprising Cl, SF₆, or HBr" (paragraph [0013]); or "etching agent comprises HF, HCl, or HBr" (paragraph [0021]); and "second etching agent is from Cl₂, SF₆, or HBr" (paragraph [0023]), whereby one of ordinary skill in the art would readily understand that the "etching agent" recited in claim 1 (wherein claim 1 explicitly relates to etching silicon), relates unambiguously to an agent for etching silicon (such as HF, HCl, HBr, Cl, Cl₂, SF₆). Applicants respectfully submit that one of ordinary skill in the art would not have reasonably broadened the term "etching agent", recited in a method claim related to silicon etching, for example to an etching agent for etching organic material, as opposed to silicon.

However, in order to move the application to issue, Applicants have amended claim 1 to recite: "treating said patterned silicon layer with etching residues on sidewalls thereof using a gas comprising oxygen and a silicon etching agent to thereby form an etching

buffer layer conformally on the etching residues and the top surface of the patterned silicon layer". Applicants respectfully submit that, as acknowledged by the Examiner, H₂O is not a silicon etching agent, whereby claim 1 is not disclosed or suggested by Gardner or the acknowledged prior art, and claim 1 is patentable over Gardner and the acknowledged prior art.

Claims 7 and 14

Applicants respectfully submit that the above arguments can be used to show that Gardner, as well as the admitted prior art, fails to disclose or suggest a method as recited in claim 7, and in particular comprising *"treating said patterned silicon layer with patterns and etching residues on sidewalls thereof using a gas comprising oxygen and a silicon etching agent to thereby form an etching buffer layer conformally on the etching residues and the top surface of the patterned silicon layer"*, or a method as recited in claim 14, and in particular comprising *"introducing a gas containing oxygen treatment, using a gas comprising oxygen and a silicon etching agent, to conformally form an etching buffer layer on the etching residues and the top surface of the patterned silicon layer"*. Accordingly, Applicants respectfully submit that claims 7 and 14 are patentable over Gardner in view of the admitted prior art.

Claims 2-3, 5-6, 8-10, 12-13, 15 and 17-20

Claims 2-3 and 5-6 depend directly or indirectly on claim 1; claims 8-10 and 12-13 depend directly or indirectly on claim 7, and claims 15, and 17-20 depend directly on claim 14. Applicants respectfully submit that at least in view of their dependency on claims 1, 7 or 14, claims 2-3, 5-6, 8-10, 12-13, 15 and 17-20 are patentable over Gardner in view of the admitted prior art.

Claims 4, 11 and 16

Claim 4 depends on claim 1, claim 11 depends on claim 7, and claim 16 depends on claim 14. Applicants respectfully submit that the Examiner has failed to show that Schloesser discloses or suggests a method as recited in claim 1, and in particular comprising *"treating said patterned silicon layer with etching residues on sidewalls thereof using a gas comprising oxygen and a silicon etching agent to thereby form an etching buffer layer conformally on the etching residues and the top surface of the patterned silicon layer"*, as recited in claim 7, and in particular comprising *"treating said patterned silicon layer with patterns and etching residues on sidewalls thereof using a gas comprising oxygen and a silicon etching agent to thereby form an etching buffer layer conformally on the etching residues and the top surface of the patterned silicon layer"*, or a method as recited in claim 14, and in particular comprising *"introducing a gas containing oxygen treatment, using a gas comprising oxygen and a silicon etching agent, to conformally form an etching buffer layer on the etching residues and the top surface of the patterned silicon layer"*. Accordingly, in view of the above, Applicants submit that the Examiner has failed to show that a combination of Gardner, the admitted prior art and Schloesser would have led one skilled in the art to a method as recited in claims 1, 7 or 14. Applicants therefore respectfully submit that claims 1, 7 and 14 are patentable over Gardner in view of Schloesser, and that at least in view of their dependency on claims 1, 7 or 14, claims 4, 11 and 16 are patentable over Gardner in view of the admitted prior art and further in view of Schloesser.

Claims 21-24

Claims 21 and 22 depend on claim 1, claim 23 depends on claim 7, and claim 24 depends on claim 14. Applicants respectfully submit that at least in view of their dependency, claims 21-24 are patentable over the cited references.

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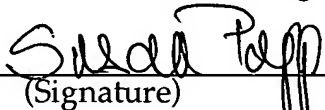
In view of the above, Applicants submit that the application is now in condition for allowance and respectfully urge the Examiner to pass this case to issue.

The Commissioner is authorized to charge any additional fees that may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

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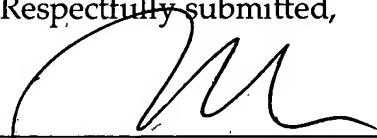
September 22, 2006
(Date of Transmission)

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(Signature)

~~09/26~~^{xsp} 09/22/06
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Attachments: Request for Continued Examination, check for the RCE and the excess claims fees, calculation sheet for the excess claims fees and postcard